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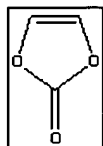
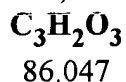
Enter a chemical name, CAS Number, molecular formula, or molecular weight

New Search

Or choose: [Substructure Query with Plug-In](#) or [Structure Query with Java](#)

1,3-Dioxol-2-one [872-36-6]

Synonyms: Vinylene carbonate; Vinylene carbonate, 97% (Assay);



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ACX Number X1041811-0
Melting Point (°C)
Boiling Point (°C)
Refractive Index
Evaporation Rate
Flash Point (°C)
DOT Number
Comments

CAS RN 872-36-6
Density
Vapor Density
Vapor Pressure
Water Solubility
EPA Code
RTECS

More information about the chemical is available in these categories:

Biochemistry

Chemicals Inspection and Testing Service, Japan: Biodegradation and Bioaccumulation Data of Existing Chemicals

Information about this particular compound

Chemical Online Order

Available Chemicals Exchange

Information about this particular compound

Health

ATSDR Internet HazDat Site Contaminant Query

Information about this particular compound

Physical Properties

NIST Chemistry WebBook

Information about this particular compound

ABCR GmbH&Co KG

Ethylene carbonate

Ethylene carbonate, 99%

Proton NMR Spectral Molecular Formula Index

Information about this particular compound

Galactic Industries Corporation Spectral Database

FTIR SPECTRUM of ETHYLENE CARBONATE, 98%

NFPA Chemical Hazard Labels

Information about this particular compound

Regulations

Texas Clean Air Act

Enter a chemical name, CAS Number, molecular formula, or molecular weight

New Search

Substructure Query with Plug-In or Substructure Query with Java

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Chem&CX.Com

SciStore.Com

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ChemSoft.Com

CambridgeSoft

ChemFinder.Com

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[CambridgeSoft](#)
[ChemQuota.Com](#)[ChemFinder.Com](#)
[ChemACK.Com](#)[ChemStore.Com](#)
[SciStore.Com](#)[ChemNews.Com](#)
[LabEquipe.Com](#)[ChemClub.Com](#)
[ChemSali.Com](#)

Enter a chemical name, CAS Number, molecular formula, or molecular weight

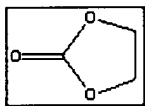
Or choose: [Substructure Query with Plug-In](#) or [Structure Query with Java](#)

Ethylene Carbonate [96-49-1]

Synonyms: ethylene glycol carbonate; 1,3-Dioxolan-2-one;



88.0628

[View with ChemDraw Plugin](#)[BUY AT CHEMACS.COM](#)[VIEW CHEM3D MODEL](#)[Add Compound](#)[Add or Change
Property](#)[Add Link](#)[Feedback](#)**ACX Number** ➤ X1006793-5**Melting Point (°C)** ➤ 35 - 37**Boiling Point (°C)** ➤ 243 - 244 at 740 mm Hg**Refractive Index** ➤**Evaporation Rate** ➤**Flash Point (°C)** ➤ 145**DOT Number** ➤**Comments** ➤**CAS RN** ➤ 96-49-1**Density** ➤ 1.321**Vapor Density** ➤**Vapor Pressure** ➤**Water Solubility** ➤**EPA Code** ➤**RTCS** ➤ FF9550000

More information about the chemical is available in these categories:

L12 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS

RN 9011-17-0 REGISTRY

CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (9CI)
(CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Ethene, 1,1-difluoro-, polymer with 1,1,2,3,3,3-hexafluoro-1-propene
(9CI); Propene, hexafluoro-, polymer with 1,1-difluoroethylene (8CI)

OTHER NAMES:

CN 1,1-Difluoroethylene-1,1,2,3,3,3-hexafluoro-1-propene copolymer;
1,1-Difluoroethylene-hexafluoropropene copolymer; 1,1-Difluoroethylene-
hexafluoropropene polymer; 1,1-Difluoroethylene-hexafluoropropylene
copolymer; 1,1-Difluoroethylene-perfluoropropene copolymer; Akeogard CO;
Ethylidene fluoride-hexafluoropropene copolymer; F 26; F 26L;
Fluoroplast 26; Ftorlon F 26; Ftoroplast 26; Ftoroplast 26L;
Ftoroplast F 26; FX 9613; Hexafluoropropene-vinylidene fluoride
copolymer; Hexafluoropropene-vinylidene fluoride polymer;
Hexafluoropropylene-vinylidene difluoride copolymer; Hexafluoropropylene-
vinylidene difluoride polymer; Hexafluoropropylene-vinylidene fluoride
copolymer; Hexafluoropropylene-vinylidene fluoride polymer; Hylar 2800;
Hylar FXH 6; KF 2000; KF 2300; KF Polymer T 2300; Kynar 1800; Kynar
2750; Kynar 2751; Kynar 2800; Kynar 2801; Kynar 2801F; Kynar 2812;
Kynar 2822; Kynar 2850; Kynar Flex 2750; Kynar Flex 2751; Kynar Flex
2800; Kynar Flex 2801-00; Kynar Flex 2821; Kynar Flex 2822; Kynar Flex
2850; Perfluoropropene-vinylidene fluoride copolymer;
Perfluoropropene-vinylidene fluoride polymer; Perfluoropropylene-
vinylidene fluoride copolymer; Perfluoropropylene-vinylidene fluoride
polymer; Poly(vinylidene fluoride-hexafluoropropylene); Propylene
hexafluoride-vinylidene fluoride copolymer; Propylene
hexafluoride-vinylidene fluoride polymer; SF 2; SF 2 (polymer); Solef
10512; Solef 11010; Solef 11012; Solef 11512; Solef 21010; Solef
21508; Solvay 20615; Tecnoflon FOR 4; Vinylidene difluoride-
hexafluoropropylene copolymer; Vinylidene fluoride-hexafluoropropene
copolymer; Vinylidene fluoride-hexafluoropropene polymer; Vinylidene
fluoride-hexafluoropropylene copolymer; Vinylidene fluoride-
hexafluoropropylene polymer; Vinylidene fluoride-perfluoropropene
copolymer; Vinylidene fluoride-perfluoropropene polymer; Vinylidene
fluoride-propylene hexafluoride copolymer; Viton Free Flow TA

L14 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:10867 CAPLUS
 TITLE: Non-aqueous electrolyte and non-aqueous electrolyte secondary battery
 INVENTOR(S): Unoki, Shigeyuki; Konishi, Hajime; Yamashita, Katsumi; Watanabe, Shoichiro; Takeuchi, Takashi; Takezawa, Hideharu; Hamamoto, Toshikazu; Ueki, Akira; Abe, Koji
 PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan; Ube Industries, Ltd.
 SOURCE: PCT Int. Appl., 40 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------------|-----------------|----------|
| WO 2002001665 | A1 | 20020103 | WO 2001-JP4924 | 20010611 |
| W: CN, KR, US | | | | |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR | | | | |
| PRIORITY APPLN. INFO.: | | JP 2000-191795 | A | 20000626 |
| | | JP 2000-352185 | A | 20001120 |

AB A non-aq. electrolyte contg. propylene carbonate and 1,3-propanesultone as additives can reduce the amt. of a gas evolved during storage at a high temp. of a non-aq. electrolyte secondary battery comprising the electrolyte, a non-aq. electrolyte contg. at least one compd. selected from the group consisting of vinylene carbonate, di-Ph disulfide, di-p-tolyl disulfide and bis(4-methoxyphenyl)disulfide as an additive can improve cycle characteristics of a non-aq. electrolyte secondary cell comprising the electrolyte, and a non-aq. electrolyte contg. a combination of the above two types of additives can provide a non-aq. electrolyte secondary cell exhibiting excellent retention of capacity and storage stability.

IT Battery electrolytes
 Secondary batteries
 Solid state secondary batteries
 (non-aq. electrolyte and non-aq. electrolyte secondary battery)

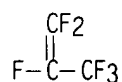
IT Carbon black
 RL: DEV (Device component use); USES (Uses)
 (non-aq. electrolyte and non-aq. electrolyte secondary battery)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 4437-85-8, Butylene carbonate 7782-42-5, Graphite 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 12190-79-3, Cobalt lithium oxide (CoLiO₂) 21324-40-3, Lithium hexafluorophosphate (LiPF₆) 24937-79-9, Polyvinylidene fluoride
 RL: DEV (Device component use); USES (Uses)
 (non-aq. electrolyte and non-aq. electrolyte secondary battery)

IT 103-19-5, Di-p-tolyl disulfide 108-32-7, Propylene carbonate
872-36-6, Vinylene carbonate 882-33-7, Diphenyl disulfide
1120-71-4, 1,3-Propanesultone 5335-87-5, Bis(4-methoxyphenyl)disulfide
RL: MOA (Modifier or additive use); USES (Uses)
(non-aq. electrolyte and non-aq. electrolyte secondary battery)
IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
RL: DEV (Device component use); USES (Uses)
(non-aq. electrolyte and non-aq. electrolyte secondary battery)
RN 9011-17-0 CAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (9CI)
(CA INDEX NAME)

CM 1

CRN 116-15-4
CMF C3 F6

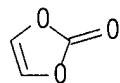


CM 2

CRN 75-38-7
CMF C2 H2 F2



IT 872-36-6, Vinylene carbonate
RL: MOA (Modifier or additive use); USES (Uses)
(non-aq. electrolyte and non-aq. electrolyte secondary battery)
RN 872-36-6 CAPLUS
CN 1,3-Dioxol-2-one (9CI) (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:676382 CAPLUS

DOCUMENT NUMBER: 135:213509
 TITLE: Solid electrolyte battery
 INVENTOR(S): Hara, Tomitaro; Shibuya, Mashio; Suzuki, Yusuke
 PATENT ASSIGNEE(S): Sony Corp., Japan
 SOURCE: Eur. Pat. Appl., 13 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|--------------------------|-----------------|----------|
| EP 1132987 | A2 | 20010912 | EP 2001-105134 | 20010302 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| JP 2001256999 | A2 | 20010921 | JP 2000-72512 | 20000310 |
| NO 2001001210 | A | 20010911 | NO 2001-1210 | 20010309 |
| CN 1319906 | A | 20011031 | CN 2001-111305 | 20010309 |
| PRIORITY APPLN. INFO.: | | JP 2000-72512 A 20000310 | | |

AB In a solid electrolyte cell, oxidative decompn. of electrolyte components is suppressed to maintain the superior cell performance. The solid electrolyte includes a neg. electrode having a neg. electrode current collector and a neg. electrode active material, a pos. electrode having a pos. electrode current collector and a pos. electrode active material and a solid electrolyte arranged between the neg. electrode and the pos. electrode and which is comprised of an electrolyte salt dispersed in a matrix polymer. A diene compd. is contained in at least one of the pos. electrode and the solid electrolyte.

IT Sulfonic acids, uses
 RL: DEV (Device component use); USES (Uses)
 (alkanesulfonic; solid electrolyte battery contg. diene compd.)

IT Secondary batteries
 (lithium; solid electrolyte battery contg. diene compd.)

IT Polysulfones, uses
 RL: DEV (Device component use); USES (Uses)
 (polyether-; solid electrolyte battery contg. diene compd.)

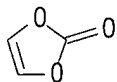
IT Polyethers, uses
 RL: DEV (Device component use); USES (Uses)
 (polysulfone-; solid electrolyte battery contg. diene compd.)

IT Battery anodes
 Battery cathodes
 Battery electrolytes
 (solid electrolyte battery contg. diene compd.)

IT Fluoropolymers, uses
 Polycarbonates, uses
 Polyoxyalkylenes, uses
 Polysulfones, uses
 RL: DEV (Device component use); USES (Uses)
 (solid electrolyte battery contg. diene compd.)

IT Cycloalkadienes

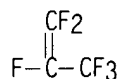
RL: MOA (Modifier or additive use): USES (Uses)
(solid electrolyte battery contg. diene compd.)
IT 60-29-7, Diethyl ether, uses 67-68-5, DmsO, uses 75-05-8,
Acetonitrile, uses 96-47-9, 2-Methyltetrahydrofuran 96-48-0,
.gamma.-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl
carbonate 108-32-7, Propylene carbonate 109-99-9, Tetrahydrofuran,
uses 110-71-4, 1,2-Dimethoxyethane 452-10-8, 2,4-Difluoroanisole
616-38-6, Dimethyl carbonate 646-06-0, 1,3-Dioxolane 872-36-6,
Vinylene carbonate 7550-35-8, Lithium bromide 7782-42-5,
Graphite, uses 7789-24-4, Lithium fluoride, uses 7791-03-9,
Lithium perchlorate 9002-84-0, PtfE 9003-05-8, Polyacryl amide
12190-79-3, cobalt lithium oxide colio2 14283-07-9,
Lithium tetrafluoroborate 21324-40-3, Lithium
hexafluorophosphate 24937-79-9, Polyvinylidene fluoride 25087-26-7,
Polymethacrylic acid 25322-68-3, Peo 25322-69-4, Polypropylene oxide
29935-35-1, Lithium hexafluoroarsenate 33454-82-9,
Lithium triflate 90076-65-6 131651-65-5, Lithium
perfluorobutanesulfonate 132404-42-3
RL: DEV (Device component use): USES (Uses)
(solid electrolyte battery contg. diene compd.)
IT 628-41-1, 1,4-Cyclohexadiene
RL: MOA (Modifier or additive use): USES (Uses)
(solid electrolyte battery contg. diene compd.)
IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
RL: TEM (Technical or engineered material use): USES (Uses)
(solid electrolyte battery contg. diene compd.)
IT 872-36-6, Vinylene carbonate
RL: DEV (Device component use): USES (Uses)
(solid electrolyte battery contg. diene compd.)
RN 872-36-6 CAPLUS
CN 1,3-Dioxol-2-one (9CI) (CA INDEX NAME)



IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
RL: TEM (Technical or engineered material use): USES (Uses)
(solid electrolyte battery contg. diene compd.)
RN 9011-17-0 CAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (9CI)
(CA INDEX NAME)

CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 75-38-7
CMF C2 H2 F2



L14 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:488750 CAPLUS
DOCUMENT NUMBER: 135:79460
TITLE: Nonaqueous electrolytic secondary battery
INVENTOR(S): Hosoya, Yosuke
PATENT ASSIGNEE(S): Sony Corporation, Japan
SOURCE: Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

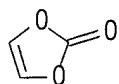
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|------------|
| EP 1113515 | A1 | 20010704 | EP 2000-128148 | 20001221 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| JP 2001185221 | A2 | 20010706 | JP 1999-369266 | 19991227 |
| US 2001036579 | A1 | 20011101 | US 2000-749982 | 20001227 |
| PRIORITY APPLN. INFO.: | | | JP 1999-369266 | A 19991227 |

AB A nonaq. electrolytic cell comprises a pos. electrode, which has a pos. electrode active material layer contg., at least a pos. electrode active material, a neg. electrode, which has a neg. electrode active material layer contg., at least, a neg. electrode active material, and an electrolyte wherein a sulfur compd. is added to at least one of the pos. electrode active material layer, the neg. electrode active material layer, and the electrolyte.

IT Battery anodes
Battery cathodes
Battery electrolytes
Conducting polymers
(nonaq. electrolytic secondary battery)

IT Coke

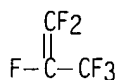
- Fluoropolymers, uses
Polyacetylenes, uses
Polyoxyalkylenes, uses
Polyphosphazenes
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolytic secondary battery)
- IT Thiols (organic), uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES
(Uses)
(nonaq. electrolytic secondary battery)
- IT Carbon fibers, uses
RL: DEV (Device component use); USES (Uses)
(vitreous; nonaq. electrolytic secondary battery)
- IT 96-47-9, 2-Methyltetrahydrofuran 96-48-0, .gamma.-Butyrolactone
96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7,
Propylene carbonate 110-71-4, 1,2-Dimethoxyethane 126-33-0, Sulfolane
554-12-1, Methylpropionate 616-38-6, Dimethyl carbonate 623-42-7,
Methyl butyrate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl
carbonate 629-14-1, 1,2-Diethoxyethane 872-36-6, Vinylene
carbonate 2916-31-6 4437-85-8, Butylene carbonate 7440-44-0, Carbon,
uses 7782-42-5, Graphite, uses 7791-03-9, Lithium
perchlorate 9011-17-0, Hexafluoropropylene-vinylidene fluoride
copolymer 12190-79-3, cobalt lithium oxide colio2
14283-07-9, Lithium tetrafluoroborate 21324-40-3,
Lithium hexafluorophosphate 24937-79-9, PvdF 25067-58-7,
Polyacetylene 25322-68-3, Peo 25322-69-4, Polypropylene oxide
25684-76-8, Tetrafluoroethylene-vinylidene fluoride copolymer
28960-88-5, Trifluoroethylene-vinylidene fluoride copolymer 29935-35-1,
Lithium hexafluoroarsenate
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolytic secondary battery)
- IT 693-36-7, Distearyl thiodipropionate 7487-88-9, Magnesium sulfate, uses
7757-82-6, Sodium sulfate, uses 7757-83-7, Sodium sulfite 7757-88-2,
Magnesium sulfite 7778-80-5, Potassium sulfate, uses 10117-38-1,
Potassium sulfite
RL: DEV (Device component use); MOA (Modifier or additive use); USES
(Uses)
(nonaq. electrolytic secondary battery)
- IT 872-50-4, n-Methylpyrrolidone, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(nonaq. electrolytic secondary battery)
- IT 872-36-6, Vinylene carbonate 9011-17-0,
Hexafluoropropylene-vinylidene fluoride copolymer
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolytic secondary battery)
- RN 872-36-6 CAPLUS
- CN 1,3-Dioxol-2-one (9CI) (CA INDEX NAME)



RN 9011-17-0 CAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (9CI)
(CA INDEX NAME)

CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 75-38-7
CMF C2 H2 F2



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:247693 CAPLUS
DOCUMENT NUMBER: 134:254717
TITLE: Lactone solvents for electrochemical cells
INVENTOR(S): Barker, Jeremy; Gao, Feng; Thurston, Edward P.
PATENT ASSIGNEE(S): Valence Technology, Inc., USA; Delphi Technologies,
Inc.
SOURCE: PCT Int. Appl., 47 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|----------|
| WO 2001024305 | A1 | 20010405 | WO 2000-US20473 | 20000726 |

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU,
CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,
IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,
MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-408065 A1 19990929

AB An electrochem. cell is disclosed having an electrolyte comprising a solvent and a solute, the solute comprising a lithium salt, and the solvent comprising an org. solvent selected from the group of lactones.

IT Heterocyclic compounds

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(five-membered; lactone solvents for electrochem. cells)

IT Battery electrolytes

(lactone solvents for electrochem. cells)

IT Carbonates, uses

Lactones

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(lactone solvents for electrochem. cells)

IT Secondary batteries

(lithium; lactone solvents for electrochem. cells)

IT 7439-93-2D, Lithium, salt, uses 7782-42-5, Graphite, uses
12031-65-1, Lithium nickel oxide linio2 12190-79-3, Cobalt
Lithium oxide colio2 21324-40-3, Lithium
hexafluorophosphate 39457-42-6, Lithium manganese oxide

RL: DEV (Device component use); USES (Uses)

(lactone solvents for electrochem. cells)

IT 7440-44-0, Carbon, uses

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(lactone solvents for electrochem. cells)

IT 57-57-8, .beta.-Propiolactone 72-03-7, Propionate, uses 96-48-0D,
.gamma.-Butyrolactone, ethylated 96-48-0D, .gamma.-Butyrolactone,
methylated 96-48-0D, .gamma.-Butyrolactone, propylated 96-49-1,
Ethylene carbonate 105-58-8, Diethyl carbonate 108-29-2 108-32-7,
Propylene carbonate 542-52-9, Dibutyl carbonate 616-38-6, Methyl
carbonate 623-96-1, Dipropyl carbonate 872-36-6, Vinylene
carbonate 1679-47-6 4437-85-8, Butylene carbonate 73506-93-1,
Diethoxyethane

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

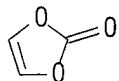
(lactone solvents for electrochem. cells)

IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer

RL: TEM (Technical or engineered material use); USES (Uses)

(lactone solvents for electrochem. cells)

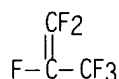
IT 872-36-6, Vinylene carbonate
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(lactone solvents for electrochem. cells)
RN 872-36-6 CAPLUS
CN 1,3-Dioxol-2-one (9CI) (CA INDEX NAME)



IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(lactone solvents for electrochem. cells)
RN 9011-17-0 CAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (9CI)
(CA INDEX NAME)

CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 75-38-7
CMF C2 H2 F2



REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:246688 CAPLUS
DOCUMENT NUMBER: 134:254694
TITLE: Gel electrolyte battery
INVENTOR(S): Shibuya, Mashio; Hatazawa, Tsuyonobu; Hara, Tomitaro;
Shibamoto, Goro; Goto, Shuji

PATENT ASSIGNEE(S): Sony Corporation, Japan
 SOURCE: Eur. Pat. Appl., 24 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|------------|
| EP 1089371 | A1 | 20010404 | EP 2000-121124 | 20000928 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| JP 2001167797 | A2 | 20010622 | JP 1999-375345 | 19991228 |
| NO 2000004856 | A | 20010402 | NO 2000-4856 | 20000927 |
| CN 1293461 | A | 20010502 | CN 2000-128592 | 20000930 |
| PRIORITY APPLN. INFO.: | | | JP 1999-279790 | A 19990930 |
| | | | JP 1999-375345 | A 19991228 |

AB The present invention provides a gel electrolyte cell including a nonaq. electrolytic soln. contg. lithium-contg. electrolyte salt solved in a nonaq. solvent and made into a gel state by a matrix polymer, and the gel electrolyte contains vinylene carbonate or deriv. thereof in the amt. not less than 0.05 wt% and not greater than 5 wt%. This gel electrolyte exhibits an excellent chem. stability with the neg. electrode, strength, and liq.-retention characteristic. This gel electrolyte enables to obtain a gel electrolyte cell satisfying the cell capacity, cycle characteristic, load characteristic, and low-temp. characteristic.

IT Battery electrolytes
 Gels
 (gel electrolyte battery)

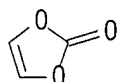
IT Fluoropolymers, uses
 Polyoxyalkylenes, uses
 RL: DEV (Device component use); USES (Uses)
 (gel electrolyte battery)

IT Lithium alloy, base
 RL: DEV (Device component use); USES (Uses)
 (gel electrolyte battery)

IT 7429-90-5, Aluminum, uses
 RL: DEV (Device component use); USES (Uses)
 (current collector; gel electrolyte battery)

IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate
 872-36-6, Vinylene carbonate 7439-93-2, Lithium, uses
 7440-44-0, Carbon, uses 7791-03-9, Lithium perchlorate
 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
 12190-79-3, Cobalt lithium oxide colio2 14283-07-9,
 Lithium tetrafluoroborate 21324-40-3, Lithium
 hexafluorophosphate 24937-79-9, PvdF 25014-41-9, Polyacrylonitrile
 25067-61-2, Polymethacrylonitrile 25322-68-3, Peo 25322-69-4,
 Polypropylene oxide 90076-65-6 113066-89-0, Cobalt lithium
 nickel oxide Co0.2LiNi0.8O2 132843-44-8
 RL: DEV (Device component use); USES (Uses)

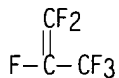
(gel electrolyte battery)
IT 96-48-0, .gamma.-Butyrolactone 452-10-8, 2,4-Difluoroanisole
7782-42-5, Graphite, uses 167951-81-7
RL: MOA (Modifier or additive use); USES (Uses)
(gel electrolyte battery)
IT 872-36-6, Vinylene carbonate 9011-17-0,
Hexafluoropropylene-vinylidene fluoride copolymer
RL: DEV (Device component use); USES (Uses)
(gel electrolyte battery)
RN 872-36-6 CAPLUS
CN 1,3-Dioxol-2-one (9CI) (CA INDEX NAME)



RN 9011-17-0 CAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (9CI)
(CA INDEX NAME)

CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 75-38-7
CMF C2 H2 F2



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:840169 CAPLUS
DOCUMENT NUMBER: 134:7002
TITLE: Solid electrolyte battery

INVENTOR(S): Akashi, Hiroyuki; Shibamoto, Gorou
 PATENT ASSIGNEE(S): Sony Corporation, Japan
 SOURCE: Eur. Pat. Appl., 42 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|------------|
| EP 1056142 | A1 | 20001129 | EP 2000-110893 | 20000523 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| JP 2001043897 | A2 | 20010216 | JP 1999-365064 | 19991222 |
| CN 1275816 | A | 20001206 | CN 2000-117653 | 20000526 |
| PRIORITY APPLN. INFO.: | | | JP 1999-146653 | A 19990526 |
| | | | JP 1999-365064 | A 19991222 |

AB A solid electrolyte battery (having improved energy d. and safety) incorporates a cathode, an anode disposed opposite to the cathode. and a separator disposed between cathode and the anode; and solid electrolytes each of which is disposed between the cathode and the anode.

IT Gels
 (electrolyte; solid electrolyte battery)

IT Fluoropolymers, uses
 RL: DEV (Device component use); USES (Uses)
 (gel electrolyte; solid electrolyte battery)

IT Polyolefins
 RL: DEV (Device component use); USES (Uses)
 (separator; solid electrolyte battery)

IT Battery electrolytes
 (solid electrolyte battery)

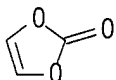
IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 452-10-8, 2,4-Difluoroanisole 872-36-6, Vinylene carbonate 21324-40-3, Lithium hexafluorophosphate 24937-79-9, Polyvinylidene fluoride
 RL: DEV (Device component use); USES (Uses)
 (gel electrolyte; solid electrolyte battery)

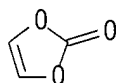
IT 9002-88-4, Polyethylene 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
 RL: DEV (Device component use); USES (Uses)
 (solid electrolyte battery)

IT 872-36-6, Vinylene carbonate
 RL: DEV (Device component use); USES (Uses)
 (gel electrolyte; solid electrolyte battery)

RN 872-36-6 CAPLUS

CN 1,3-Dioxol-2-one (9CI) (CA INDEX NAME)

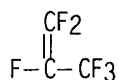




IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
RL: DEV (Device component use); USES (Uses)
(solid electrolyte battery)
RN 9011-17-0 CAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (9CI)
(CA INDEX NAME)

CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 75-38-7
CMF C2 H2 F2



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:368802 CAPLUS
DOCUMENT NUMBER: 133:7073
TITLE: Electrolytes having improved low temperature
performance
INVENTOR(S): Barker, Jeremy; Gao, Feng; Stux, Arnold
PATENT ASSIGNEE(S): Valence Technology, Inc., USA
SOURCE: PCT Int. Appl., 47 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

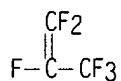
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|--|----------|-----------------|------------|
| WO 2000031817 | A1 | 20000602 | WO 1999-US22829 | 19990930 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| AU 9962812 | A1 | 20000613 | AU 1999-62812 | 19990930 |
| EP 1153455 | A1 | 20011114 | EP 1999-950079 | 19990930 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| PRIORITY APPLN. INFO.: | | | US 1998-196882 | A 19981120 |
| | | | WO 1999-US22829 | W 19990930 |
| AB | The present invention provides a novel electrolyte solvent which is usable with a variety of carbonaceous and metal oxide electrode active materials, providing improved performance over a broad temp. range, and which is stabilized to maintain cell capacity over a no. of cycles. It comprises in specific mixts. a compd. represented by R'COOR'' where R' and R'' are each independently selected from the group of Et and Pr. | | | |
| IT | Battery electrolytes Electrolytes (electrolytes having improved low temp. performance) | | | |
| IT | Acrylic polymers, uses Carbonaceous materials (technological products) Glass fibers, uses RL: DEV (Device component use); USES (Uses) (electrolytes having improved low temp. performance) | | | |
| IT | Carbon fibers, uses RL: DEV (Device component use); USES (Uses) (graphitic; electrolytes having improved low temp. performance) | | | |
| IT | Secondary batteries (lithium; electrolytes having improved low temp. performance) | | | |
| IT | 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer RL: TEM (Technical or engineered material use); USES (Uses) (binder; electrolytes having improved low temp. performance) | | | |
| IT | 96-49-1, Ethylene carbonate 105-37-3, Ethyl propionate 105-54-4, Ethyl butyrate 105-58-8, Diethyl carbonate 105-66-8, Propyl butyrate 106-36-5, Propyl propionate 108-32-7, Propylene carbonate 542-52-9, Dibutyl carbonate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 872-36-6, 1,3-Dioxol-2-one 4437-85-8, Butylene carbonate 7782-42-5, Graphite, uses 9002-88-4 9003-07-0, Polypropylene 12031-65-1, Lithium nickel oxide linio2 12057-17-9, Lithium manganese oxide limn2o4 12190-79-3, Cobalt lithium oxide colio2 21324-40-3, Lithium hexafluorophosphate 39457-42-6, Lithium manganese oxide 73506-93-1, Diethoxyethane RL: DEV (Device component use); USES (Uses) | | | |

(electrolytes having improved low temp. performance)
IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; electrolytes having improved low temp. performance)
RN 9011-17-0 CAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (9CI)
(CA INDEX NAME)

CM 1

CRN 116-15-4

CMF C3 F6



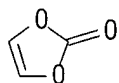
CM 2

CRN 75-38-7

CMF C2 H2 F2



IT 872-36-6, 1,3-Dioxol-2-one
RL: DEV (Device component use); USES (Uses)
(electrolytes having improved low temp. performance)
RN 872-36-6 CAPLUS
CN 1,3-Dioxol-2-one (9CI) (CA INDEX NAME)



REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1999:566292 CAPLUS

DOCUMENT NUMBER: 131:187349

TITLE: Novel electrochemically stable plasticizer for lithium ion batteries

INVENTOR(S): Liu, Peikang; Mitchell, Porter H.; Swoyer, Jeffrey;

PATENT ASSIGNEE(S): Barker, Jeremy
 SOURCE: Valence Technology, Inc., USA
 PCT Int. Appl., 52 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| WO 9944246 | A1 | 19990902 | WO 1999-US2593 | 19990205 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG US 2001023039 A1 20010920 US 1998-32660 19980227 AU 9925895 A1 19990915 AU 1999-25895 19990205 EP 1060528 A1 20001220 EP 1999-905820 19990205 R: DE, ES, FR, GB, IT, IE PRIORITY APPLN. INFO.: US 1998-32660 A1 19980227 WO 1999-US2593 W 19990205 | | | | |

OTHER SOURCE(S): MARPAT 131:187349

AB An electrode compn. or precursor paste thereof is characterized by being formed from a compn. initially comprising an active material, and a plasticizer. Optionally, at least a portion of the plasticizer from the compn. has been removed, after polymn. of the polymer material. The plasticizer is at least one compd. represented by the general formula RO-CO-(CH₂)₄-CO-OR, where R is a low alkyl selected from the group consisting of Me, Et, Bu, pentyl and hexyl. The plasticizer is further characterized by electrochem. stability .ltorsim.4.5 V.

IT Battery anodes
 Battery cathodes
 Plasticizers

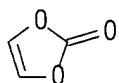
Secondary battery separators
 (electrochem. stable plasticizer for lithium ion batteries)

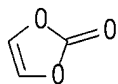
IT Secondary batteries
 (lithium; electrochem. stable plasticizer for lithium ion batteries)

IT Coke
 RL: DEV (Device component use); USES (Uses)
 (nongraphitic amorphous, counterelectrode; electrochem. stable plasticizer for lithium ion batteries)

IT Glass fibers, uses
 RL: DEV (Device component use); USES (Uses)
 (separator matrix; electrochem. stable plasticizer for lithium ion batteries)

- ion batteries)
- IT 7782-42-5, Graphite, uses
RL: DEV (Device component use); USES (Uses)
(counterelectrode; electrochem. stable plasticizer for lithium ion batteries)
- IT 12057-17-9, Lithium manganese oxide LiMn_2O_4 21324-40-3, Lithium hexafluorophosphate 39300-70-4, Lithium nickel oxide 52627-24-4, Cobalt lithium oxide
RL: DEV (Device component use); USES (Uses)
(electrochem. stable plasticizer for lithium ion batteries)
- IT 39448-96-9, Graphite lithium
RL: DEV (Device component use); FMU (Formation, unclassified); FORM (Formation, nonpreparative); USES (Uses)
(electrochem. stable plasticizer for lithium ion batteries)
- IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 542-52-9, Dibutyl carbonate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 872-36-6, Vinylene carbonate 73506-93-1, Diethoxyethane
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(electrochem. stable plasticizer for lithium ion batteries)
- IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(electrochem. stable plasticizer for lithium ion batteries)
- IT 7440-44-0, Carbon, uses
RL: DEV (Device component use); USES (Uses)
(graphitic, counterelectrode; electrochem. stable plasticizer for lithium ion batteries)
- IT 105-99-7, Dibutyl adipate 106-19-4, Dipropyl adipate 110-33-8, Dihexyl adipate 141-28-6, Diethyl adipate 627-93-0, Dimethyl adipate 14027-78-2, Dipentyl adipate
RL: TEM (Technical or engineered material use); USES (Uses)
(plasticizer; electrochem. stable plasticizer for lithium ion batteries)
- IT 9002-88-4, Polyethylene 9003-01-4, Polyacrylic acid 9003-07-0, Polypropylene
RL: DEV (Device component use); USES (Uses)
(separator matrix; electrochem. stable plasticizer for lithium ion batteries)
- IT 872-36-6, Vinylene carbonate
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(electrochem. stable plasticizer for lithium ion batteries)
- RN 872-36-6 CAPLUS
- CN 1,3-Dioxol-2-one (9CI) (CA INDEX NAME)

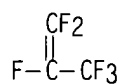




IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(electrochem. stable plasticizer for lithium ion batteries)
RN 9011-17-0 CAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (9CI)
(CA INDEX NAME)

CM 1

CRN 116-15-4
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CM 2

CRN 75-38-7
CMF C2 H2 F2



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT